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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,831	09/24/2003	Gerald F. Sigler	RDID 01034CIP US	6994

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Roche Diagnostics Corporation, Inc.
9115 Hague Road
PO Box 50457
Indianapolis, IN 46250-0457

EXAMINER	
CEPERLEY, MARY	

ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,831	SIGLER ET AL.	
	Examiner	Art Unit	
	Mary (Molly) E. Ceperley	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9,21,22,31,33-37,48,49,52,54,56,59 and 66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9,21,22,31,33-37,48,49,52,54,56,59 and 66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/23/05;11/17/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) The citation of US 2003/010088 A1 on the IDS of May 23, 2005 appears to be an incorrect citation. This reference has not been considered by the examiner.

2) Consistent with the March 09, 2006 amendment which limits the claims to the HIV protease inhibitor "lopinavir", the restriction requirement of January 09, 2006 has been rendered moot. Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59 and 66, all directed to "lopinavir", are treated on the merits in this Office action.

3) Although specific claims may be discussed in the rejections below, these rejections are also applicable to all other claims in which the noted problems/language occur.

4) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5) Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59 and 66 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the preparation and use of activated lopinavir haptens wherein the point of attachment of the "X" moiety to the "lopinavir" moiety is through the hydroxy group as shown in Figure 6, structures **6** and **6A**, does not reasonably provide enablement for the preparation and use of activated haptens wherein the point of attachment is at any other position on the "lopinavir" moiety. Other than the noted hydroxy functional group, there appears to be no other reactive functional group present on the "lopinavir" for the attachment of the "-X-$(C=Y)_m$-L-A" group. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

6) Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59 and 66 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the preparation of lopinavir-based activated haptens, tracers and immunogens which contain a linker "L" and a group "-C(Y)-" (i.e. "L" is not defined as 0 carbon atoms and 0 heteroatoms; "m" is not defined as 0), does not reasonably provide enablement for the paeparation of these activated haptens, tracers and immunogens wherein no linker "L" and group "-C(Y)-" are present. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. There is no enablement present in the specification for the preparation of activated haptens of the structure depicted in claim 1 wherein "-X-$(C=O)_m$-L-A" is defined, for example, as –O-SH {"L" not present, "m" is 0, "A" = thiol}, -N-(C=O)-CHO {"L" not present, "A" = aldehyde} or –N-diazonium {"L" not present and "m" = 0}. It is unclear what conventional synthesis methods would be used to prepare compounds containing terminal groups as defined above.

7) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8) Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) The use of the term "selected from the group consisting of" {e.g. claims 1, 31 and 59} is inconsistent with the fact that the "group" consists of only one member (i.e. "lopinavir").

b) Claim 1 is indefinite and confusing for the reason that the limitation "lacking only a hydroxyl or an amino group" fails to adequately define exactly where the "X" moiety is attached to the "lopinavir" moiety. There is no requirement that the "X" moiety be attached through

either an "amine" or "hydroxy" moiety. It is further noted that "lopinavir" {structure **6** of Figure 6} contains no available "amino group" as a possible point of attachment for the "X" moiety.

9) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10) Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***a)*** the admitted prior art as set forth in the specification taken in combination with Vierling et al (FR 98 00728) and optionally with ***b)*** Bieniarz et al (US 5,380,873).

Lopinavir is a well known HIV protease inhibitor. See the specification of this application, paragraph [0003].

Vierling et al establish that for a series of structurally related HIV protease inhibitors {page 1, line 26}, the hydroxy group on the phenyl-CH_2-containing chain bridging two cyclic moieties is the reactive functional group. See Schema 2: Indinavir {R^1 = H and its derivatives}; Exemples I and II wherein the reactive functional group is the hydroxy group at C_{26}. The claimed lopinavir structure also contains the same hydroxy group on the phenyl-CH_2-containing chain bridging two cyclic moieties which would similarly be expected to be the reactive functional group. See this application, Figure 6, structures **6** and **6A**.

The specification of this application establishes that conventional methods for preparing activated haptens used in the preparation of immunogens, tracers and hapten-specific antibodies are well known in the art. The prior art methods prepare activated haptens which include moieties of the type "-X-$(C=Y)_m$-L-A" depicted in claim 1. See the specification, paragraphs [0047] – [0055]. Bieniarz et al (considered to

be cumulative to the admitted prior art of the specification) also establish that linker-functional groups of the type depicted in claim 1 are well known in the art {see Example 6 and Figs. 12-15}.

Given the fact that lopinavir is a well known drug, it would be obvious to make the corresponding antibody to this drug in accordance with the reasoning set forth in *Ex parte Erlich*, 3 USPQ2d 1011 (1987), in particular, paragraph [5] of page 1016. One skilled in the art would be clearly motivated to use the admittedly known, conventional preparation methods for the preparation of the activated drug haptens, immunogens, tracers, and corresponding antibodies using the hydroxy group on the lopinavir moiety as a point of attachment for the linker-functional group, as claimed, since this hydroxy group has bee well established as the reactive functional group for HIV protease inhibitors of the claimed type {see Vierling et al above}.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary (Molly) E. Ceperley whose telephone number is (571) 272-0813. The examiner can normally be reached from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le, can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 20, 2006

Mary E. Ceperley

Mary (Molly) E. Ceperley
Primary Examiner
Art Unit 1641